

A	B	C	D	E	F	G	H
I	J	K	L	M	N	O	P
Q	R	S	T	U	V	W	X
Y	Z	.	,	:	;	?	!
a	b	c	d	e	f	g	h
i	j	k	l	m	n	o	p
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y	z	-	-	^	£	\$	&
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CONTENTS

ABC CBA
XYZ ZYX

ABC
XYZ

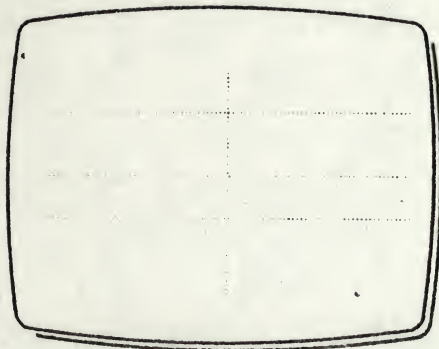
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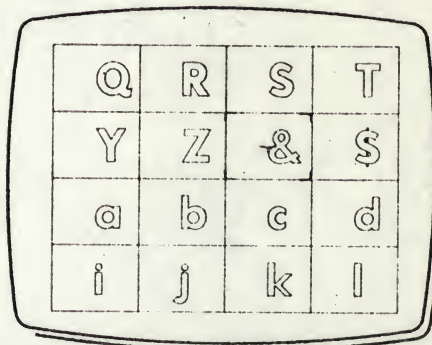
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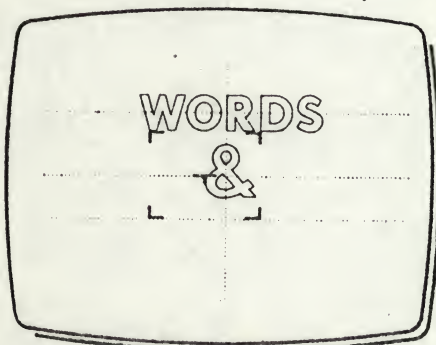
TRANSFORMATIONS



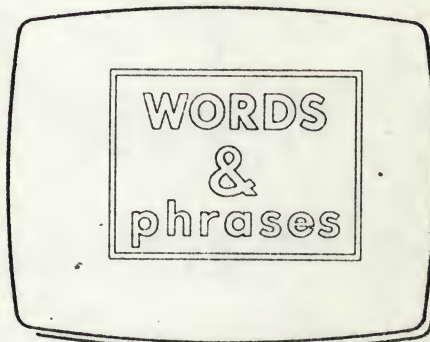
LAY-OUT GUIDELINES FOR LETTERS



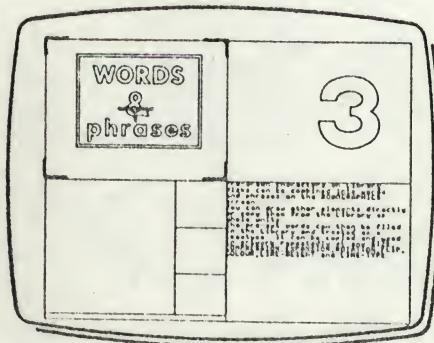
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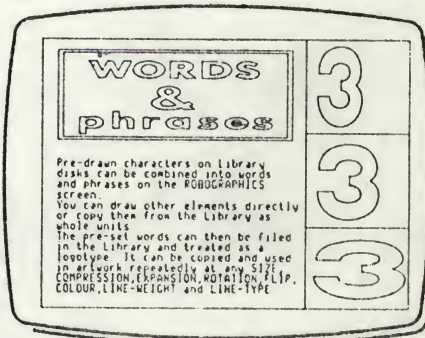
POSITION LETTERS ON GUIDELINES



ADD DRAWN DETAILS



FILE COMPLETE WORDS ON LIBRARY



ASSEMBLE PAGES WITH TEXT.

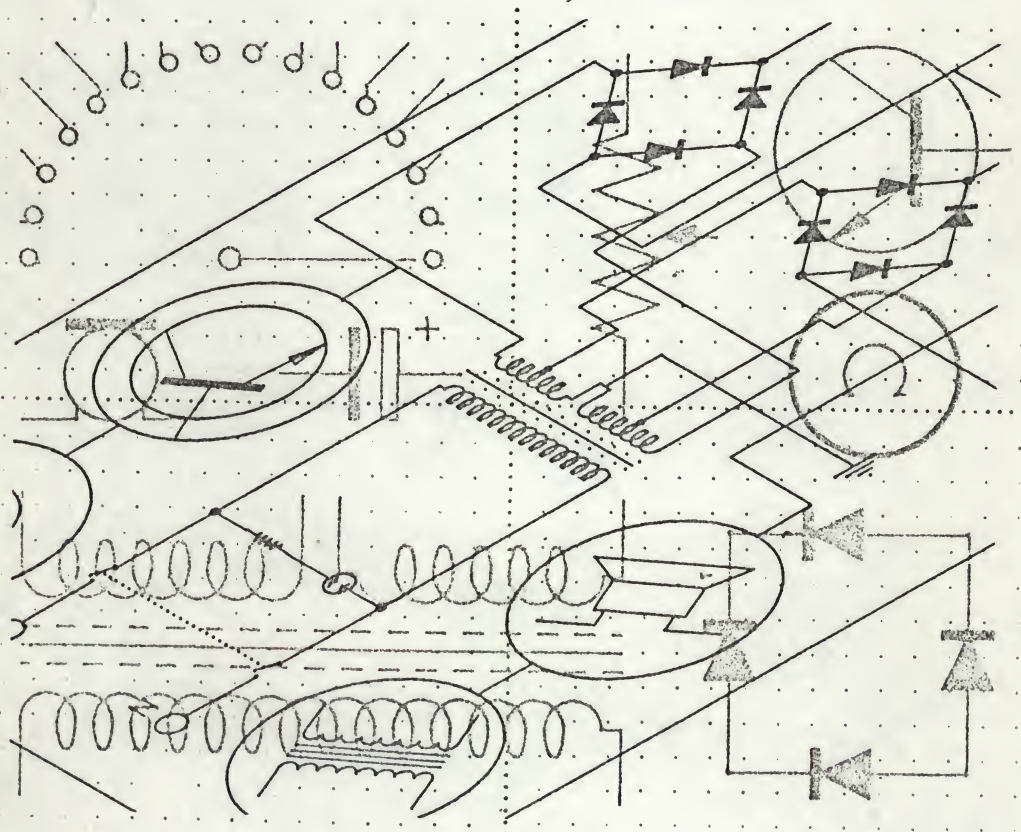




A GUIDE TO LIBRARY DISK # 226
FOR USE WITH THE ROBOGRAPHICS SYSTEM

ANALOGUE ELECTRONICS SYMBOLS

To BS3939 & others



ANALOGUE ELECTRONICS SYMBOLS

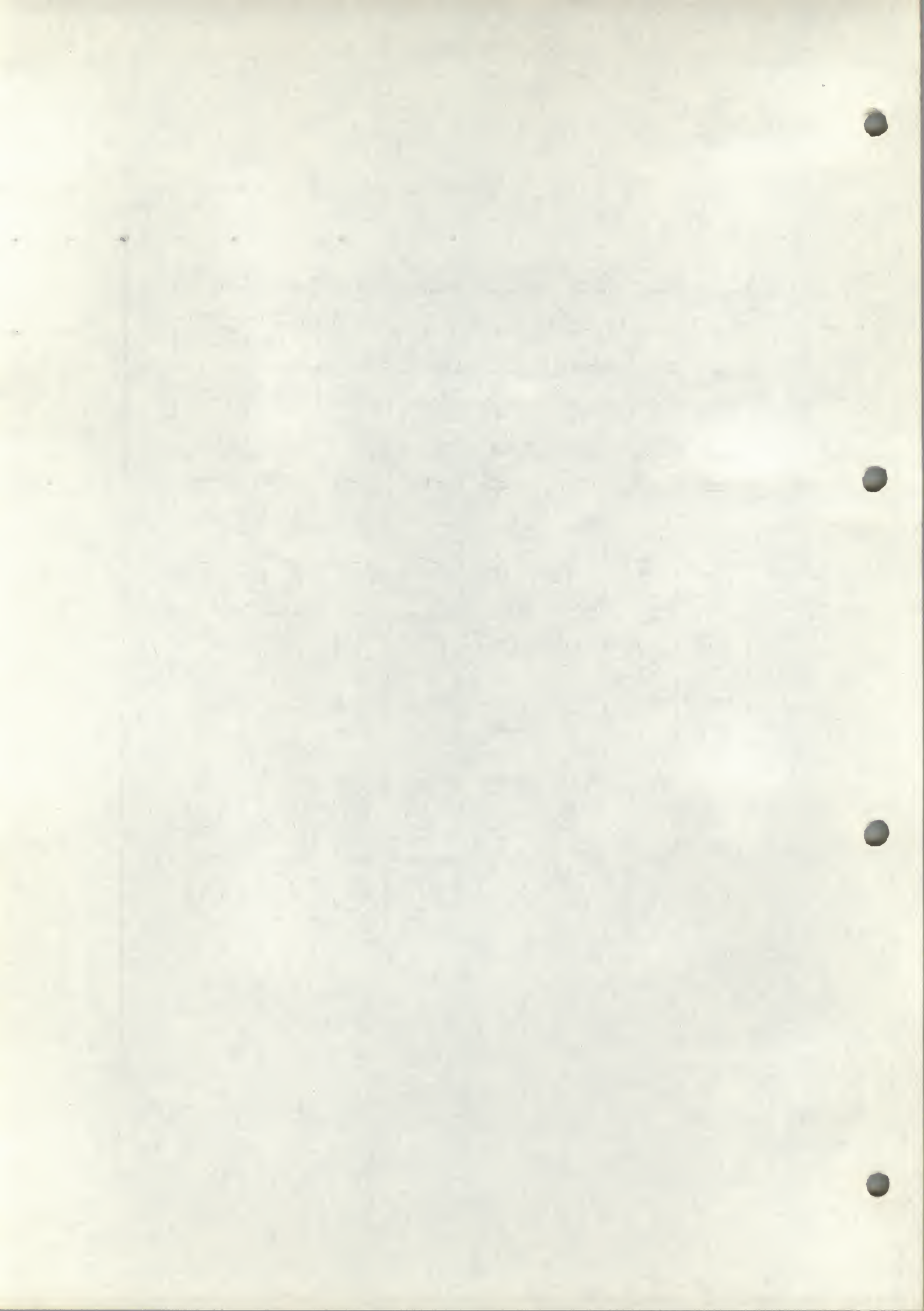
To BS3939 and others

A comprehensive range of symbols designed to be rapidly assembled into diagrams on the locked grid of the ROBOGRAPHICS system. The symbols may be positioned at any orientation and easily connected as all the connection points are made on lock points. Text and labels can be added direct from the keyboard and commonly used modules, as well as complete diagrams, can be saved on library disks to be used repeatedly and plotted out any size from A4 to A0. Transformer windings and multi-way switches are included and you can produce your own variations or draw special symbols easily.

The symbol set is compatible with the other schematic symbols available in the ROBOGRAPHICS range including Digital Electronics, Fluid Power and Chemical Engineering and so facilitating the production of multi-system diagrams.

BS RESISTOR	BS PRE-SET RESISTOR	BS VARIABLE RESISTOR	BS POTENTIOMETER	BS RESISTOR WITH MOVING CONTACT	BS PHOTO RESISTOR	BS THERMISTOR	BS HEATER
RESISTOR	PRE-SET RESISTOR	VARIABLE RESISTOR	POTENTIOMETER	RESISTOR WITH MOVING CONTACT	PHOTO RESISTOR	THERMISTOR	FUSE
CAPACITOR	POLARISED ELECTROLYTIC CAPACITOR	ELECTROLYTIC CAPACITOR	PRE-SET CAPACITOR	SWITCH N/O OPEN	SWITCH N/C CLOSED	PUSH SWITCH N/O OPEN	PUSH-SWITCH N/C CLOSED
DIODE	ZENER DIODE	LIGHT EMITTING DIODE	LIGHT SENSITIVE DIODE	CONTACT N/O OPEN	CONTACT N/C CLOSED	RELAY CONTACT N/C CLOSED	RELAY CONTACT N/O OPEN
BS DIODE	BS ZENER DIODE	BS LIGHT EMITTING DIODE	BS LIGHT SENSITIVE DIODE	MICROPHONE	EARPHONE	LOUDSPEAKER	BELL
TERMINAL	JUNCTION	CROSSING	PLUG	SOCKET	EARTH	AERIAL	BS FUSE
CELL	BATTERY	CRYSTAL	AMMETER	VOLTMETER	GENERATOR	MOTOR	WATTMETER
SIGNAL LAMP	FILAMENT LAMP	NEON LAMP	CLOCK	GAIVANOMETER	OSCILLOSCOPE	OHMMETER	WAVEMETER

INDEX A

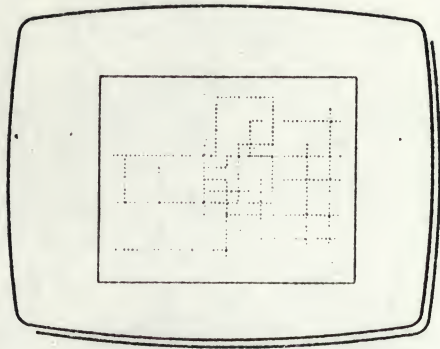


NPN TRANSISTOR	UNI-JUNCTION TRANSISTOR		OPTO TRANSISTOR
			
PNP TRANSISTOR	N CHANNEL FET	P CHANNEL FET	SCREEN
			
AMPLIFIER	INVERTING OP-AMP	GATE	SCHMITT TRIGGER
			
SILICON CONTROLLED RECTIFIER	TRIAC		
			

INDEX B

BS TRANSFORMER	BS INDUCTOR AND CORE	BS INDUCTOR	SINGLE LOOP OF COIL
			
TRANSFORMER	COIL & CORE	COIL	COIL
			
RECTIFIER BRIDGE	6 WAY SWITCH	8 WAY SWITCH	10 WAY SWITCH
			
12 WAY SWITCH	16 WAY SWITCH	20 WAY SWITCH	25 WAY SWITCH
			

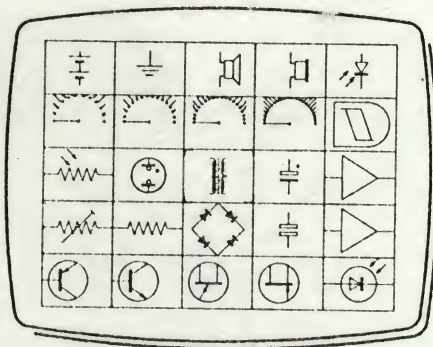
INDEX C



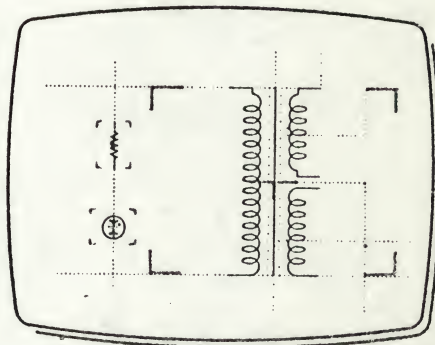
LAY-OUT THE DIAGRAM



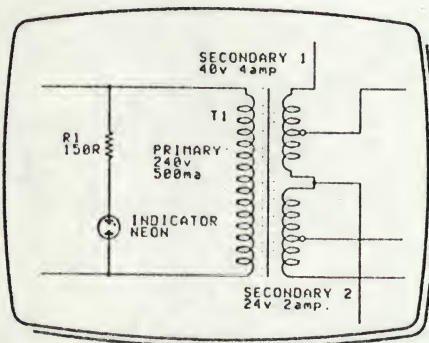
ZOOM IN TO MAGNIFY



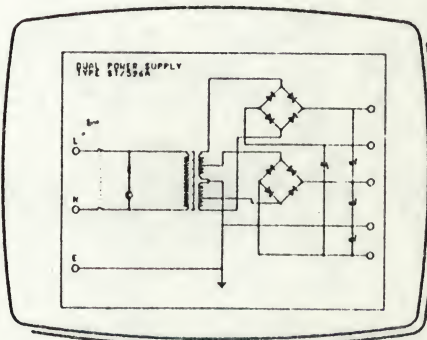
COPY FROM THE LIBRARY



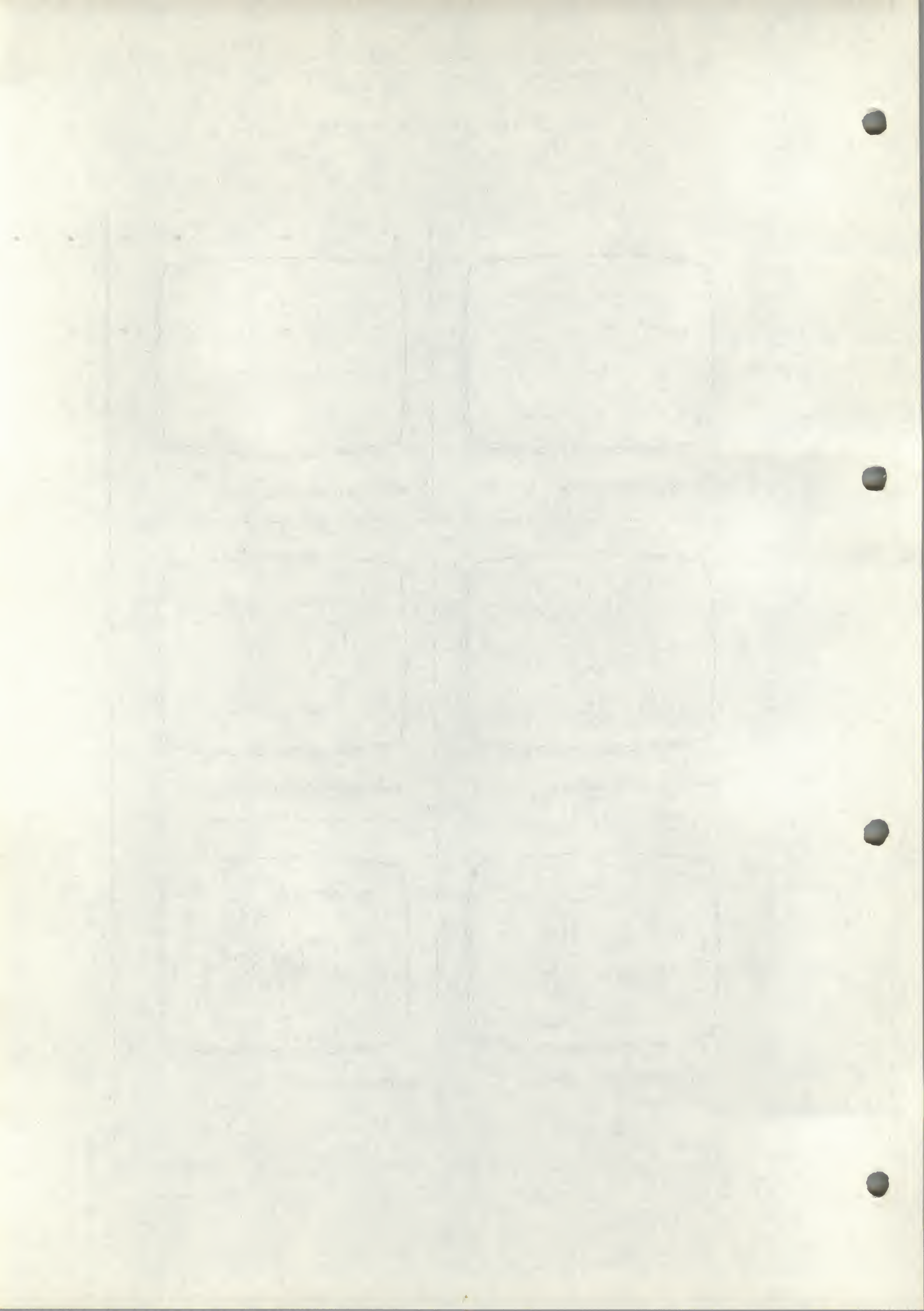
PLACE SYMBOLS ON LAYOUT

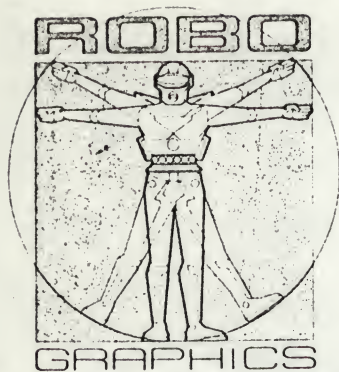


ADD CONNECTIONS AND TEXT



FINISHED AND READY TO PLOT

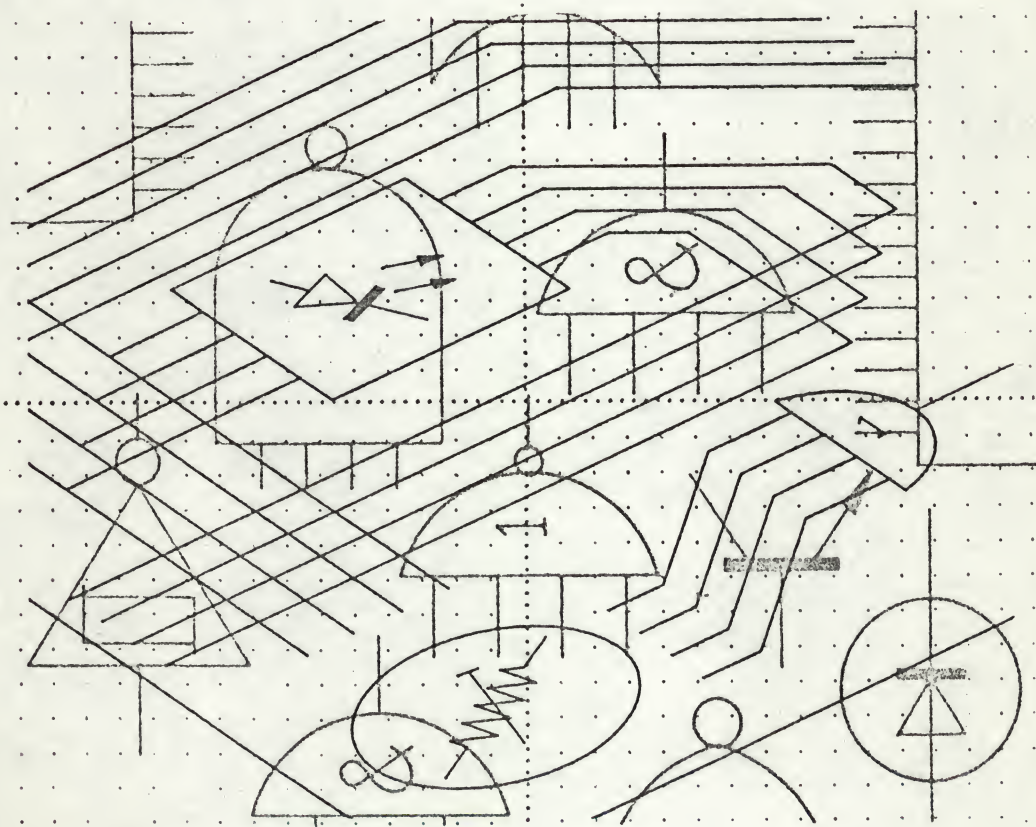




A GUIDE TO LIBRARY DISK #227
FOR USE WITH THE ROBOGRAPHICS SYSTEM

DIGITAL ELECTRONICS SYMBOLS

To BS3939 & others



DIGITAL ELECTRONICS SYMBOLS

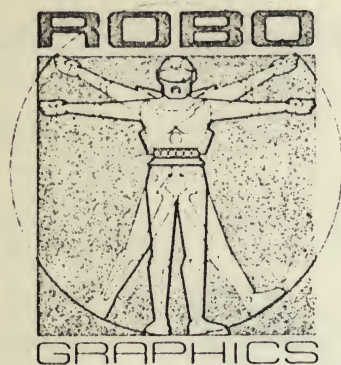
To BS3939 and others

This disk includes all the symbols commonly used for Digital electronic diagrams as well as Logic symbols to BS3939 and other useful items. All the symbols can be rapidly assembled into diagrams on the locked grid of the ROBOGRAPHICS System.

The symbols can be positioned at a range of sizes and orientations and easily connected as all the connections fall on lock points.

Text and labels can be added at any stage including individual I.C. blocks etc which can then be used repeatedly. You can modify the symbols or draw your own easily as well as combining the symbols into circuit modules which again can be saved and used repeatedly.

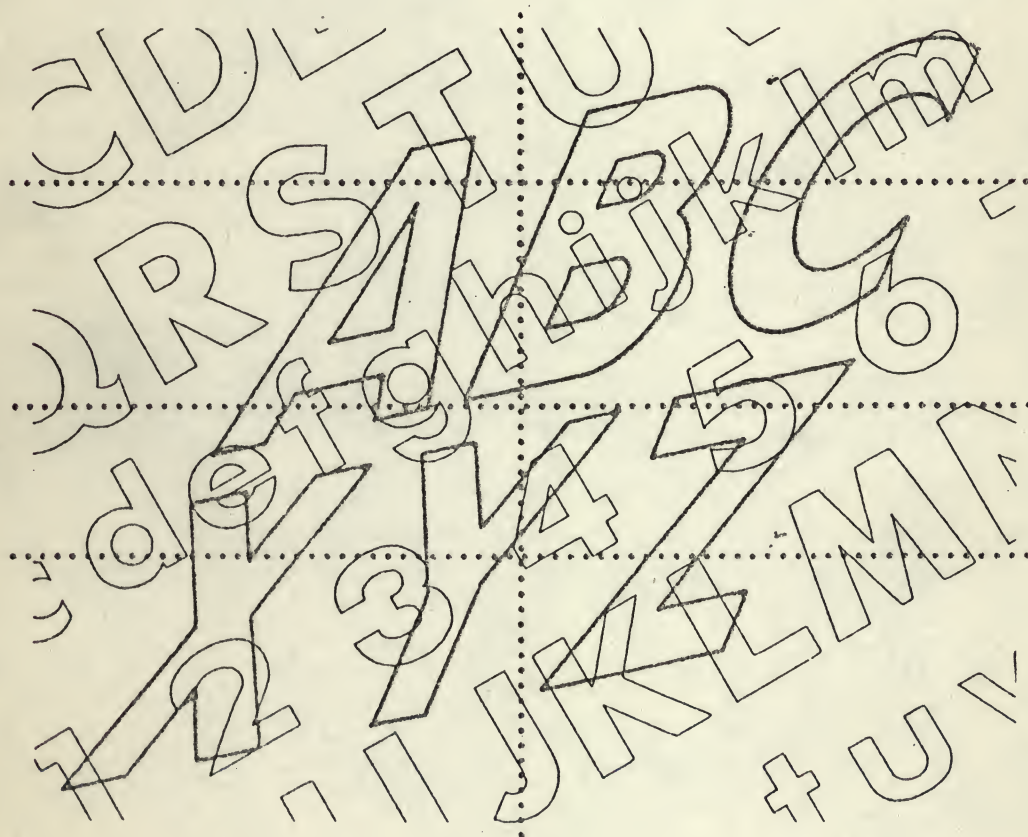
The symbols are compatible with others in the ROBOGRAPHICS range including Analogue Electronics, Fluid Power and Chemical Engineering so facilitating the production of multi-system diagrams.



A GUIDE TO LIBRARY DISK # 221
FOR USE WITH THE ROBOGRAPHICS SYSTEM

FUTURA OUTLINE ALPHABET

Based on Futura Medium



2000

1000

500

250

125

62.5

31.25

15.625

7.8125

3.90625

1.953125

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0.48828125

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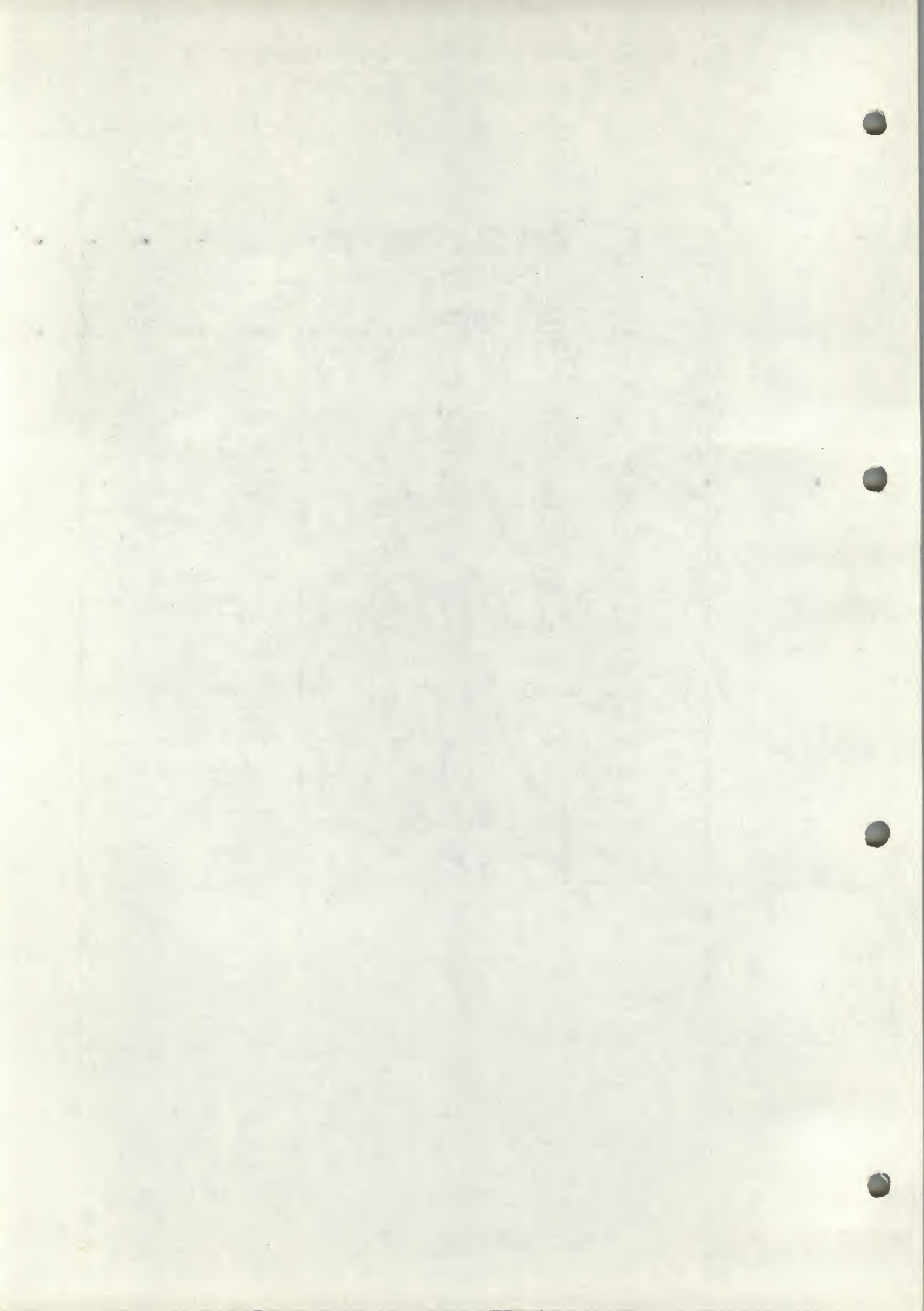
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OP AMP	OP AMP	STROBED 3 STATE GATE	INVERTER	SCHMITT TRIGGER INVERTER	NEON INVERTING BUFFER	CHASSIS	EARTH
2 INPUT NAND	3 INPUT NAND	4 INPUT NAND	2 INPUT NAND WITH SCHMITT TRIGGER	CAPACITOR	CAPACITOR	CAPACITOR	TRIMMER
2 INPUT AND	3 INPUT AND	4 INPUT AND	6 PIN IC	6 PIN IC	6 PIN IC	RESISTOR	PRESET RESISTOR
2 INPUT NOR	3 INPUT NOR	4 INPUT NOR	8 PIN IC	8 PIN IC	8 PIN IC	VARIABLE RESISTOR	VARIABLE VOLTAGE DIVIDER
2 INPUT OR	3 INPUT OR	4 INPUT OR	14 PIN IC	14 PIN IC	14 PIN IC	FIXED VOLTAGE DIVIDER	RESISTOR
2 INPUT XOR	2 INPUT EXOR	CRYSTAL	16 PIN IC	16 PIN IC	16 PIN IC	PRESET RESISTOR	VARIABLE RESISTOR
INDICATOR LAMP	DIODE	DIODE	18 PIN IC	18 PIN IC	18 PIN IC	VARIABLE VOLTAGE DIVIDER	FIXED VOLTAGE DIVIDER
TERMINAL	DIODE	LED	ZENER DIODE	PLUG	SOCKET	INDIVIDUAL CELL	BATTERY

INDEX A

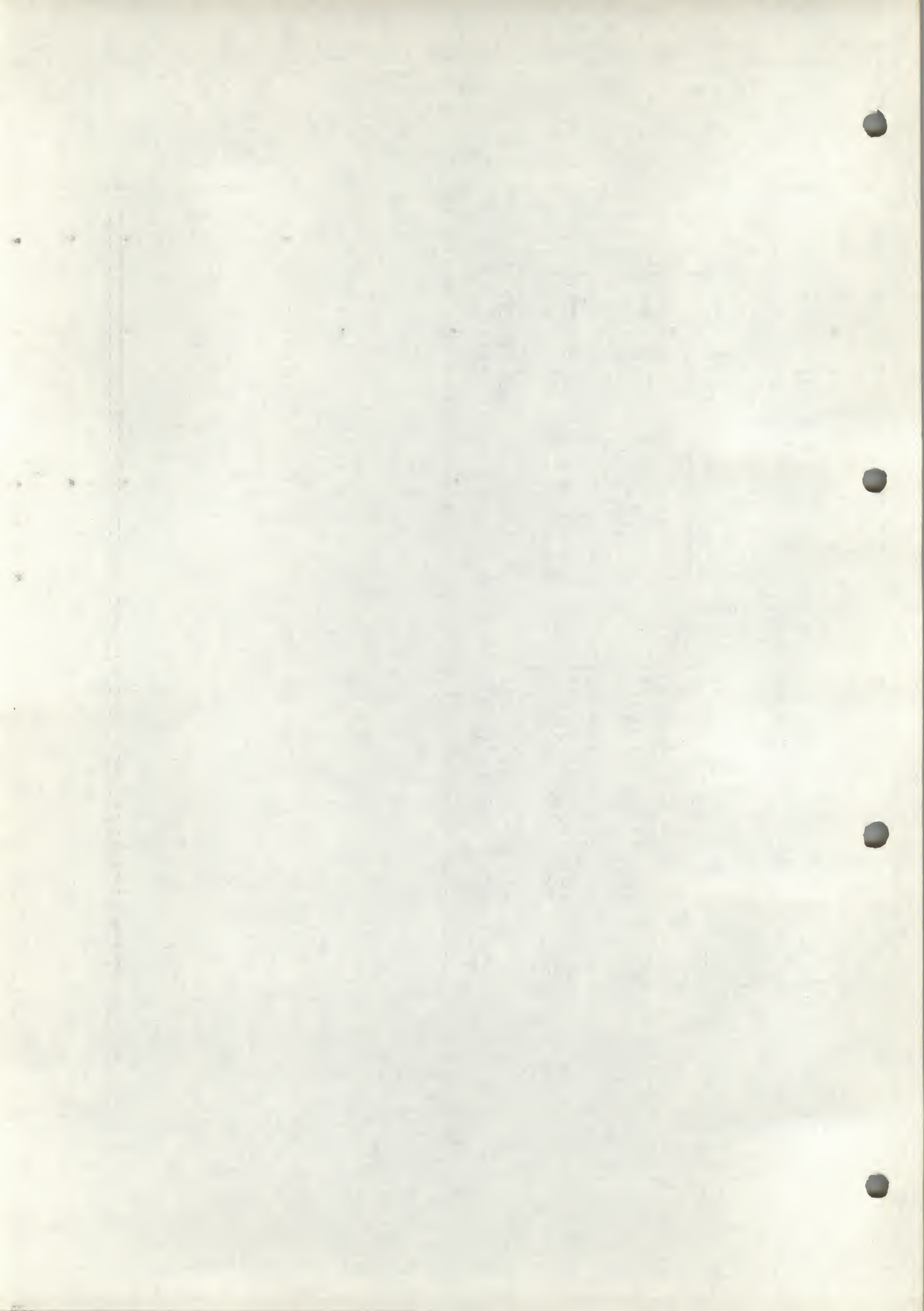


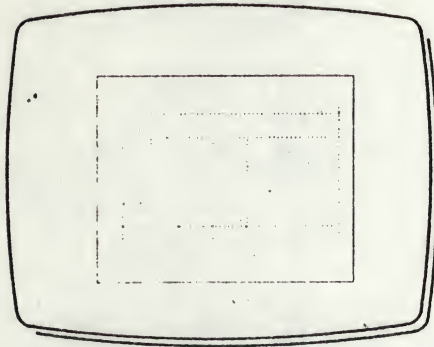
PNP TRANSISTOR	NPN TRANSISTOR	PNP TRANSISTOR	NPN TRANSISTOR
			
24 PIN IC	24 PIN IC	24 PIN IC	LIGHT SENSITIVE TRANSISTOR
			
28 PIN IC	28 PIN IC	28 PIN IC	
			
40 PIN IC	40 PIN IC	40 PIN IC	
			

INDEX B

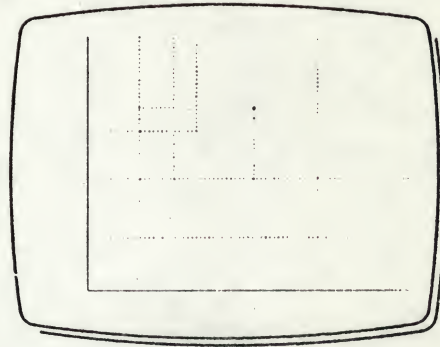
2 INPUT AND	3 INPUT AND	4 INPUT AND	AND SYMBOL
			
2 INPUT NAND	3 INPUT NAND	4 INPUT NAND	NOT SYMBOL
			
2 INPUT OR	3 INPUT OR	4 INPUT OR	BASIC GATE SYMBOL
			
2 INPUT NOR	3 INPUT NOR	4 INPUT NOR	NEGATED GATE
			

INDEX C

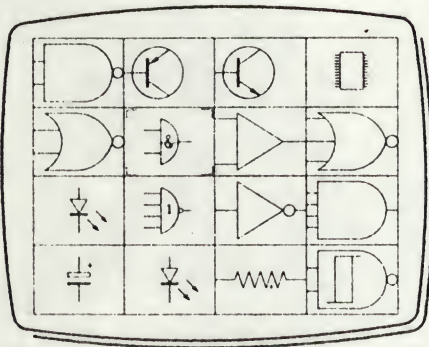




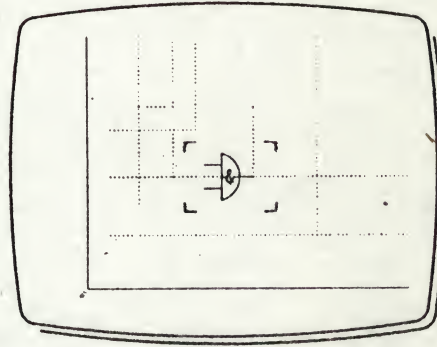
LAY-OUT THE DIAGRAM



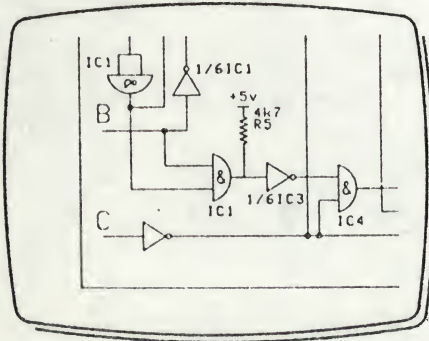
ZOOM IN TO MAGNIFY



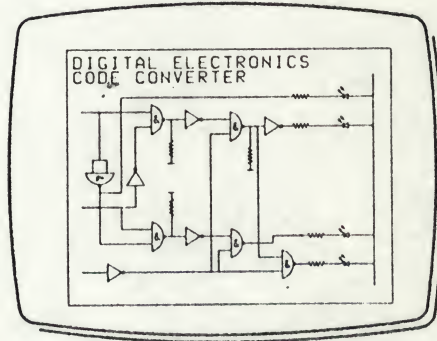
COPY FROM THE LIBRARY



PLACE SYMBOLS ON LAYOUT



ADD CONNECTIONS AND TEXT



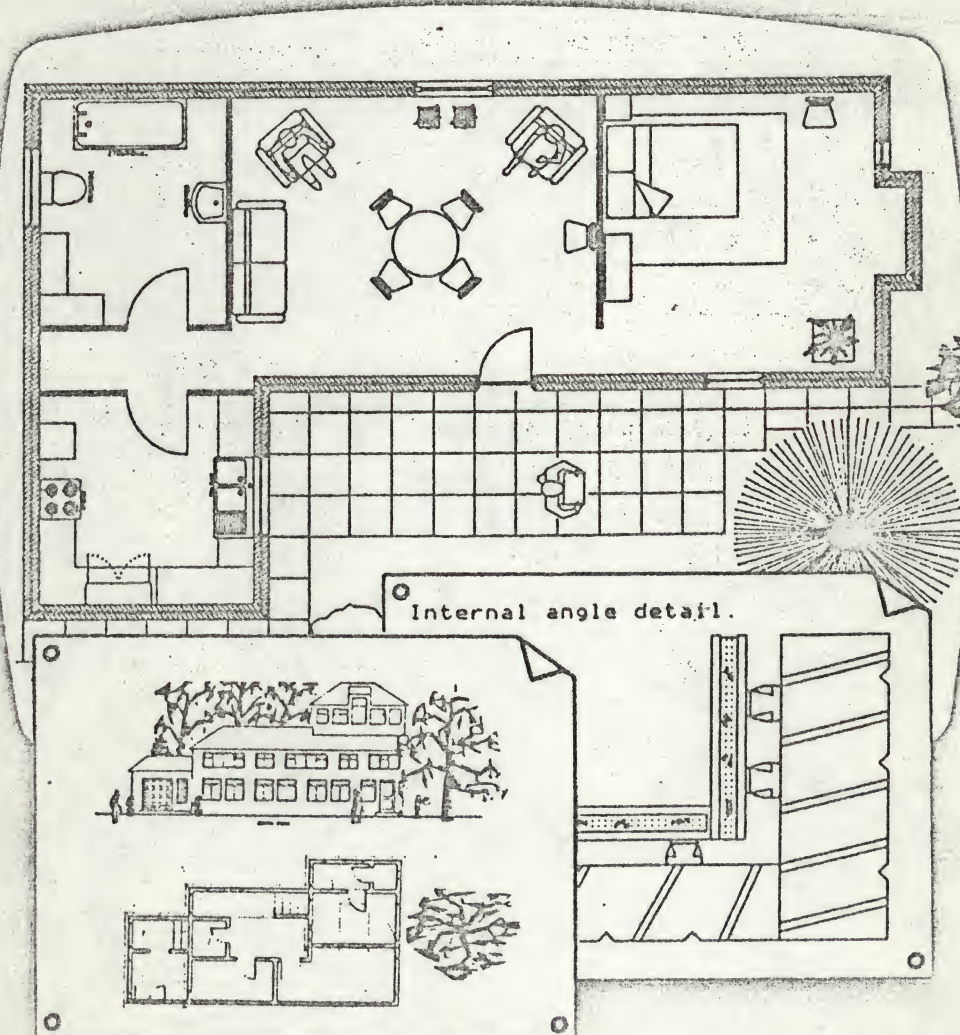
FINISHED AND READY TO PLOT

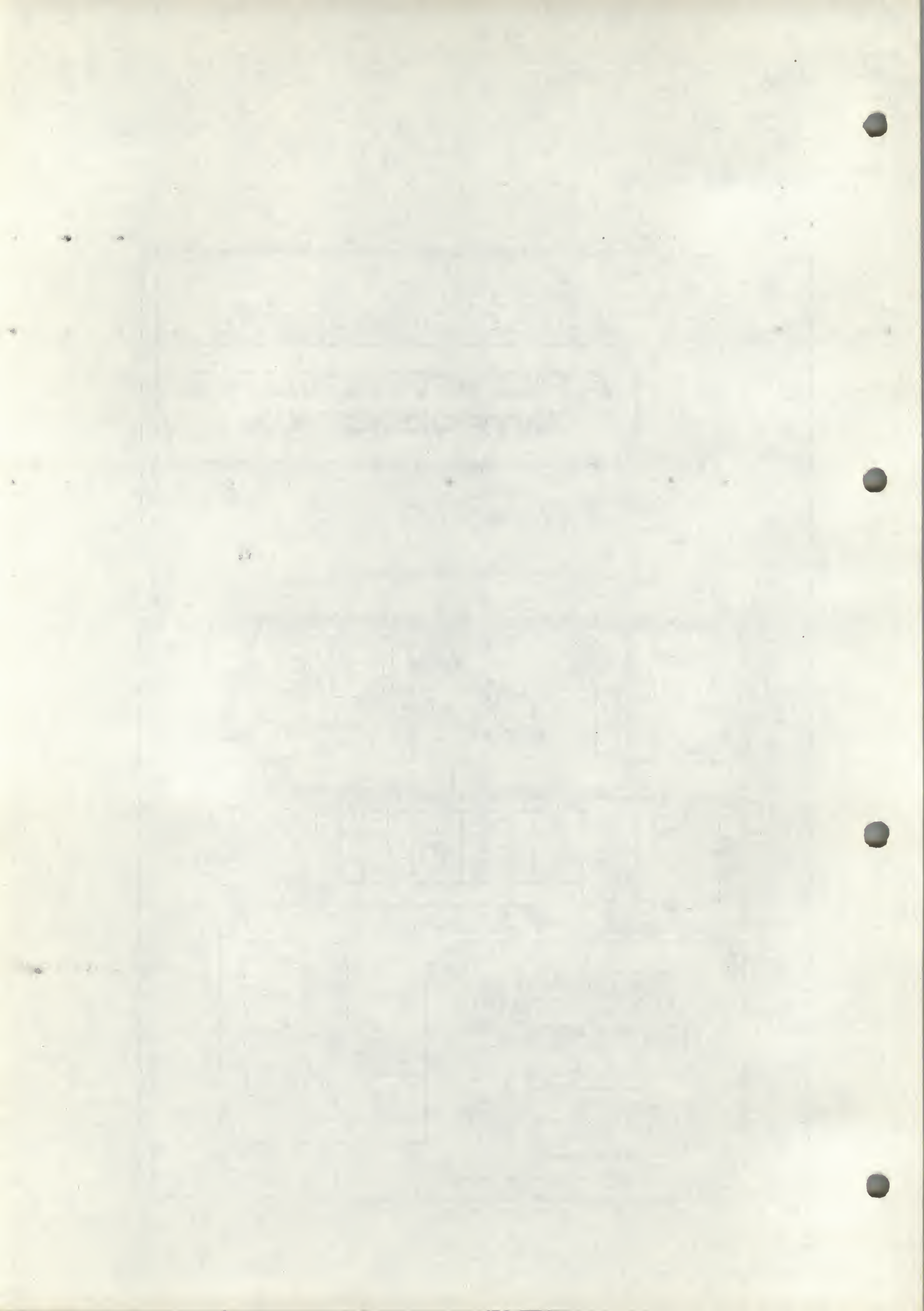


A GUIDE TO LIBRARY DISC 230

ARCHITECTURE INTRODUCTION

Scale Drawing, Kitchen Layout,
Plan modules, People & Trees





ARCHITECTURE

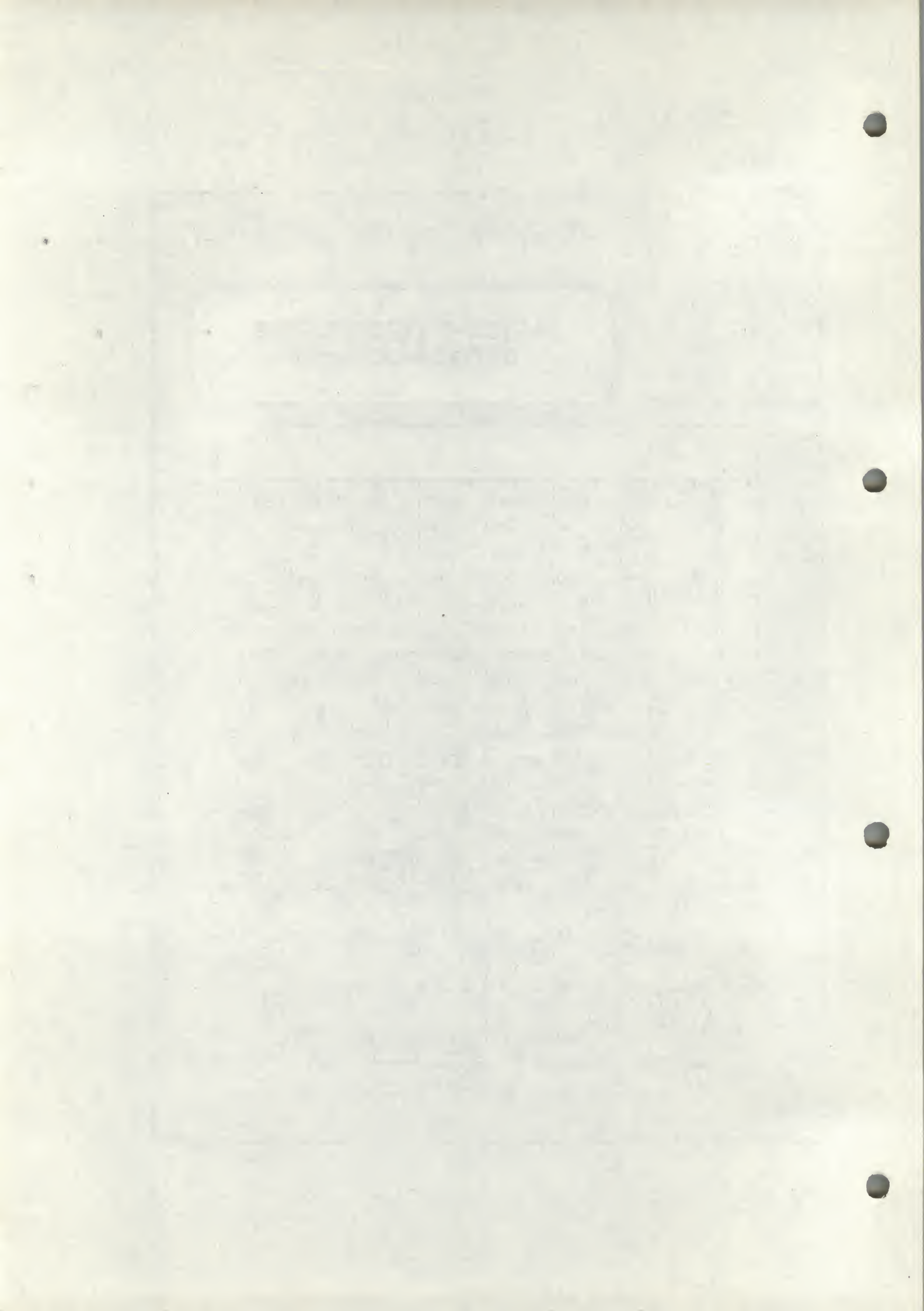
LIBRARY DISC 230

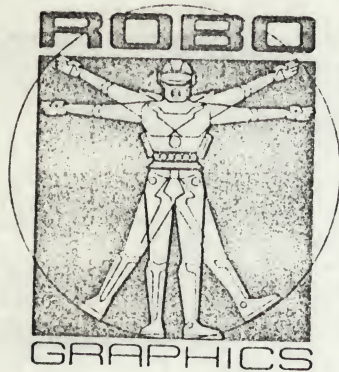


GRAPHICS

ARCHITECTURE INTRODUCTION

								9" BRICK
A1	A2	A3	A4	A5	A6	A7	A8	
								4" BRICK
A9	A10	A11	A12	A13	A14	A15	A16	
								3" PARTI
A17	A18	A19	A20	A21	A22	A23	A24	
			SPARE	SPARE	SPARE	SPARE	SPARE	
A25	A26	A27	A28	A29	A30	A31	A32	
A33	A34	A35	A36	A37	A38	A39	A40	
A41	A42	A43	A44	A45	A46	A47	A48	
A49	A50	A51	A52	A53	A54	A55	A56	
A57	A58	A59	A60	A61	A62	A63	A64	
B1	B2	B3	B4	C1	C2	C3	C4	
B5	B6	B7	B8	C5	C6	C7	C8	SPARE
B9	B10	B11	B12	C9	C10	C11	C12	
SPARE	SPARE							
B13	B14	B15	B16	METRIC	C14	C15	C16	

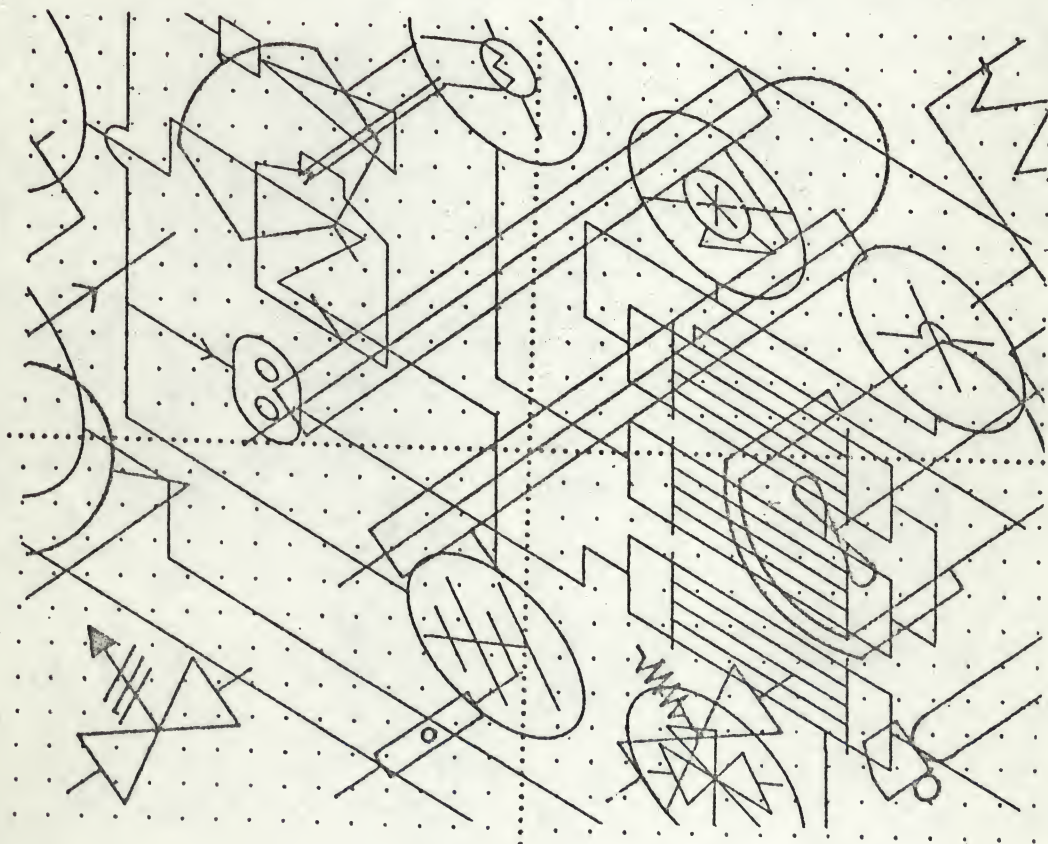




A GUIDE TO LIBRARY DISK #231
FOR USE WITH THE ROBOGRAPHICS SYSTEM

CHEMICAL ENGINEERING PROCESS

Symbols to BS1553, BS974, ASA & others



CHEMICAL ENGINEERING PROCESS

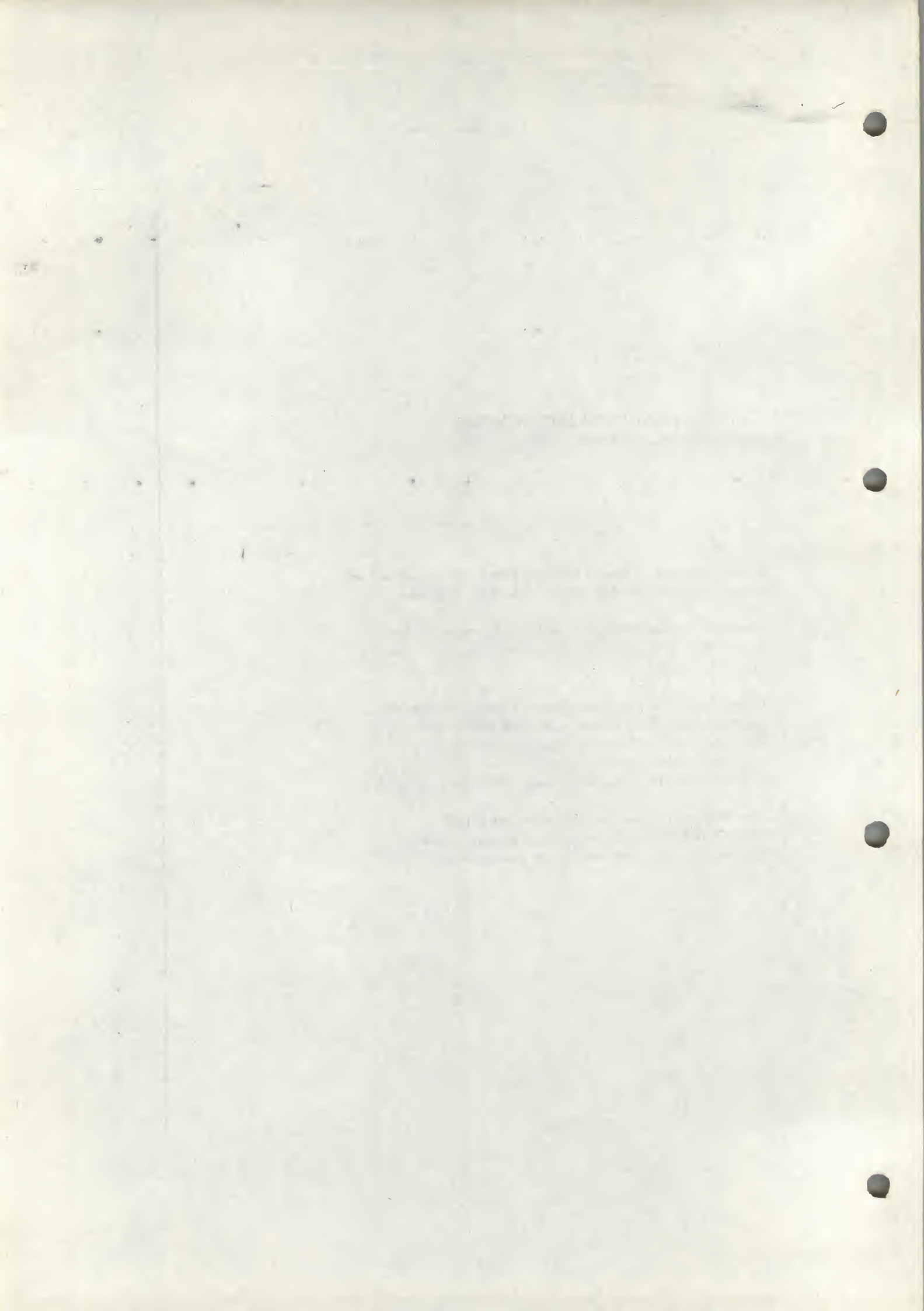
Symbols to BS1553, BS974, ASA and others

This disk contains 172 Chemical Engineering symbols commonly used in the preparation of schematic diagrams in the chemical industry.

You can of course amend any of the symbols or draw your own for specific applications, storing them on your own Library Disks to be used repeatedly as required.

The symbols have been designed so they can be rapidly assembled and interconnected on the Locked Grid of the ROBOGRAPHICS system. The symbols can be used in a range of sizes, orientations and colours which can be used to give different line-weights on plotting. Text and labels can be added to the diagrams in a range of sizes and at any position.

The symbol set is compatible with others available in the ROBOGRAPHICS range including Electronics and Fluid Power facilitating the production of multi-system schematic diagrams.

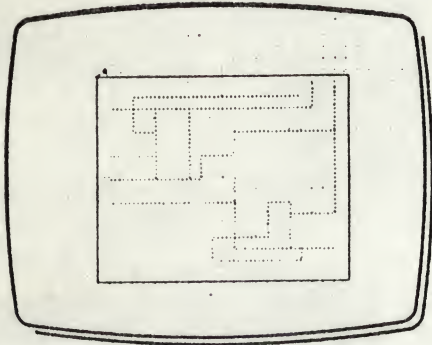


HEAT EXCHANGER 	HEAT EXCHANGER 	HEAT EXCHANGER 	HORIZONTALLY STACKED PAIR HE 	PARTIAL CONDENSER 	VERTICALLY STACKED BANK HE 	DOUBLE PIPE HE 	PLATE TYPE HE
SHELL & TUBE HE 	FLOATING HEAD HE 	HEATED TANK 	SURFACE CONDENSER 	AIR COOLED CONDENSER 	KETTLE TYPE REBOILER 	EVAPORATOR 	EVAPORATOR
FURNACE 	VESSEL 	VESSEL 	VESSEL 	DISTILLATION COLUMN (MID-SECTION) 	DISTILLATION COLUMN (TOP OR BOTTOM) 	PERFORATED TRAY 	PACKED BED
SPHERICAL GAS HOLDER 	BLOWING EGG 	AUTOClave 	CLOSED FLAT ROOF TANK 	BELL TYPE GAS HOLDER 	PERFORATED TRAYS 	CATALYST BED 	BUBBLE CAP TRAYS
FLOW DIRECTION 	RAIL TANKER 	CLOSED FLAT ROOF TANK 	CONICAL FIXED ROOF TANK 	FLOATING ROOF TANK 	SEPARATOR 	CYCLONE SEPARATOR 	LIQUID SEPARATOR
OCEAN TANKER 	ROAD TANKER 	ELECTROSTATIC PRECIPITATOR 	ROTARY VACUUM FILTER 	FILTER PRESS 	CENTRIFUGE 	SETTLING TANK 	LIQUID DECANter
FLARE STACK 	LIQUID INLET 	STEAM ENGINE 	ELECTRIC MOTOR 	TURBINE 	PUMP 	PUMP 	STEAM EJECTOR
HEAT EXCHANGER 	VESSEL 	RECIPROCATING COMPRESSOR 	RECIPROCATING COMPRESSOR 	METERING PUMP 	RECIPROCATING PUMP 	ROTARY COMPRESSOR 	ROTARY PUMP (GEAR PUMP)

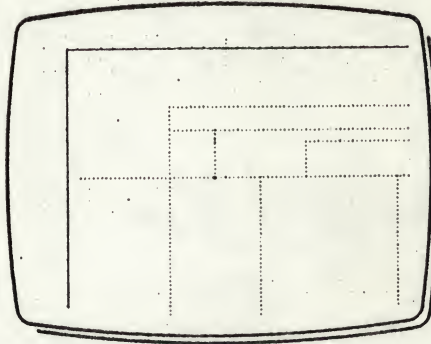
INDEX A

IN LINE VALVE	MANUAL ISOLATION VALVE	3 WAY VALVE	4 WAY VALVE	MULTI-WAY VALVE	ANGLE VALVE	DIAPHRAGM VALVE	REDUCING VALVE
BALL VALVE	BUTTERFLY VALVE	DIAPHRAGM VALVE	GATE VALVE	GLOBE VALVE	BELLOWS SEAL VALVE	NEEDLE VALVE	DASHPOT CHECKED VALVE
FLOAT OPERATED VALVE	PISTON OPERATED VALVE	QUICK OPENING VALVE	QUICK CLOSING VALVE	SOLENOID OPERATED VALVE	SPRING LOADED VALVE	STATICALLY LOADED VALVE	WEIGHT LOADED VALVE
CONTROL VALVE (CV)	CV OPENS ON FAILURE	CV CLOSES ON FAILURE	CV RETAINS POSITION	PNEUMATIC CV	PNEUMATIC VALVE WITH MANUAL OVERRIDE	MANUAL OPERATED VALVE	SAFETY VALVE (BLOW OFF PRESSURE IN BOX)
LOCAL INSTRUMENT	CONTROL ROOM BOARD INSTRUMENT	LOCAL BOARD INSTRUMENT	CONTROL ROOM & LOCAL BOARD INSTRUMENT	METER (GENERAL)	DIAPHRAGM METER	ORIFICE PLATE FLOW METER	ORIFICE CARRIER FLOW METER
FLOW RATIO CONTROLLER	VARIABLE AREA METER (ROTAMETER)	VENTURI METER	TURBINE METER	SIGHT FLOWMETER	ROTARY DISPLACEMENT METER	PILOT TUBE FLOWMETER	CALIBRATED PIPE/ORIFICE
SIGHT GLASS	CONTROL ROOM BOARD INSTRUMENT	LOCAL BOARD INSTRUMENT	CONTROL ROOM & LOCAL BOARD INSTRUMENT	PNEUMATIC VALVE	PNEUMATIC VALVE	PNEUMATIC VALVE MANUAL OVERRIDE	MANUAL VALVE

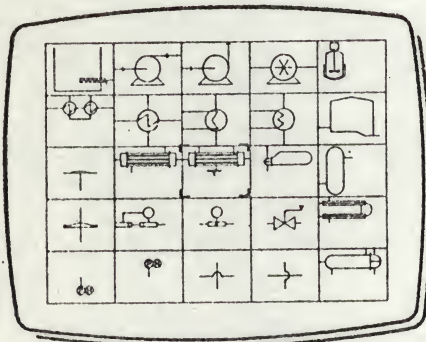
INDEX B



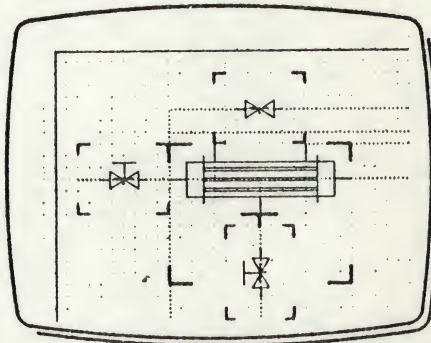
LAY-OUT THE DIAGRAM



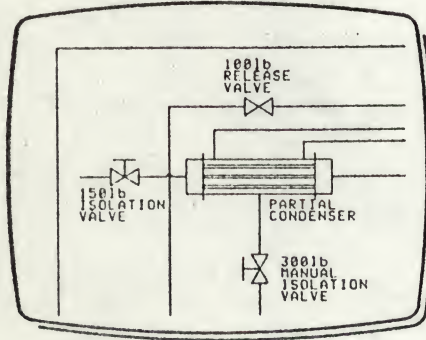
ZOOM TO MAGNIFY



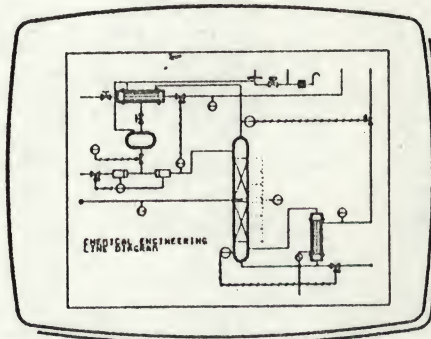
COPY FROM THE LIBRARY



PLACE SYMBOLS ON LAYOUT



ADD CONNECTIONS AND TEXT



FINISHED AND READY TO PLOT

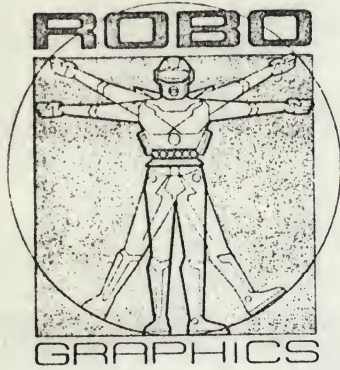


T-JUNCTION	JUNCTION	CROSSOVER	T-JUNCTION	JACKETED PIPE	BEND IN JACKETED PIPE	BEND IN JACKETED PIPE	LAGGED PIPE
STEAM TRACED PIPE	ELECTRICALLY TRACED PIPE	CROSSOVER	FINNED PIPE	JACKETED PIPE	LAGGED PIPE	END OF LAGGING	END OF JACKET
HP STEAM RETURN	MP STEAM RETURN	LP STEAM RETURN	HP STEAM SUPPLY	MP STEAM SUPPLY	PNEUMATIC INSTRUMENT LINE	CLOSED SPADE	OPEN SPADE
HP STEAM RETURN	MP STEAM RETURN	LP STEAM RETURN	HP STEAM SUPPLY	MP STEAM SUPPLY	PNEUMATIC INSTRUMENT LINE	ELECTRICAL INSTRUMENT LINE	ELECTRICAL INSTRUMENT LINE
FEEDSTOCK	PRODUCT	LIQUID VOLUME FLOW	WEIGHT FLOW	GAS VOLUME FLOW	TEMPERATURE	PRESSURE	FLOW DIRECTION
SIPHON DRAIN	OPEN VENT	TRAP	TUNDISH	BURSTING DISK	IN-LINE BURSTING DISK	FLAME ARRESTER	EXHAUST HEAD

INDEX C

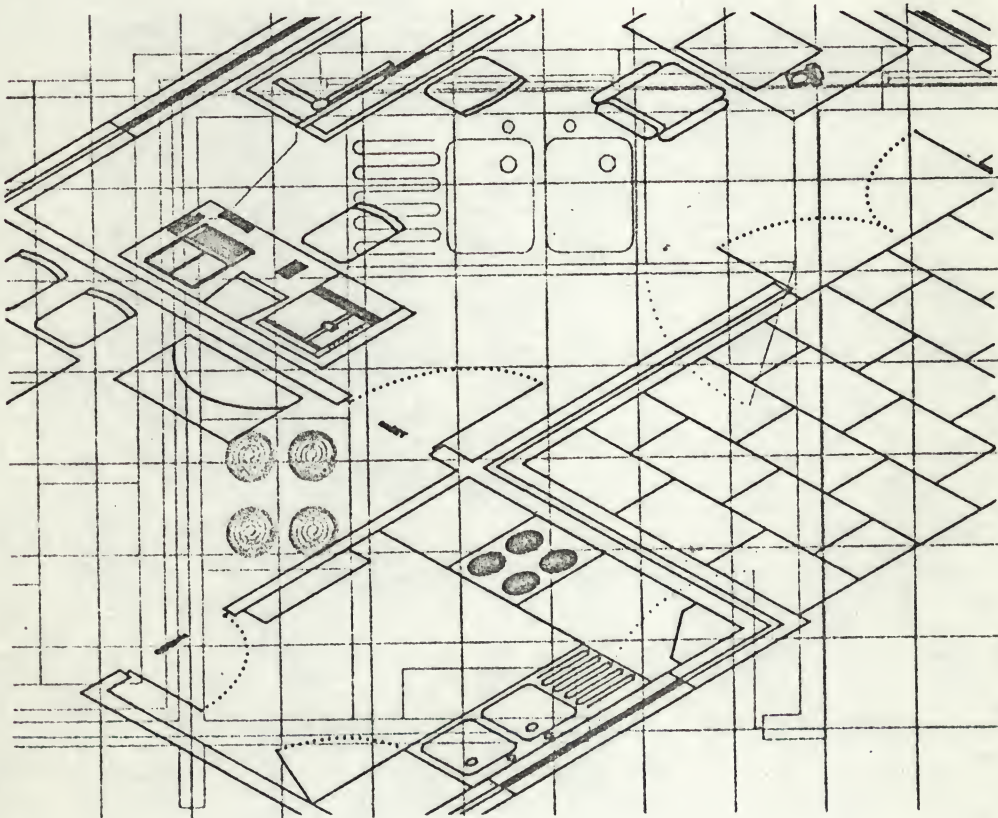
ROBOCOM LTD., CIL BUILDING, GOODWIN STREET, LONDON N4 3HQ
TELEPHONE 01-263 3388 or 01-263 8585

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A GUIDE TO LIBRARY DISK #235
FOR USE WITH THE ROBOGRAPHICS SYSTEM

SCALE PLAN DRAWING AIDS



SCALE PLAN DRAWING AIDS .

This disk is intended to be used in conjunction with the scale drawing techniques detailed in section 3 of the ROBOGRAPHICS user manual.

The disk contains various grids, scales, standard openings and other aids to help speed up the job of drawing groundplans into the system.

Remember that you can produce your own drawing aids at any time, tailoring them to your specific needs.

All the items on the disk (except the arrows on Index C) are drawn and filed on a scale page. To use them simply COPY the required unit onto your own scale workpage (or ZOOMed view) and use as indicated below.

INDEX A 1-12 – DRAWING GRIDS

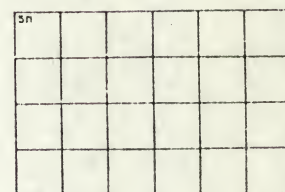
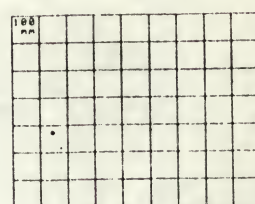
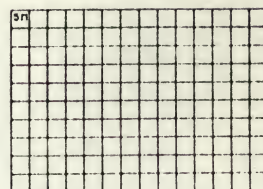
These are squared grids drawn on various page sizes and with different divisions.

Before starting to draw your plan guideline set an appropriate page size then COPY across the grid nearest that size (e.g. for a 25m page use a 20m grid.)

Now draw a perimeter guideline on the page using ZOOM and ADD to achieve the required dimensions. You will find the COPIED grid makes counting lock points much easier. You can use guide grids at any zoomed view, but when you COPY a grid from the Library ensure that the page size on which it was drawn is smaller than the screen view at which you are intending to use it or it will not fit. For small details you can move the grid around the workpage to cover the area in which you are working.

NOTE: When drawing an initial guideline you should be clear whether you are drawing internal, external or centre lines. (You can of course mix them so long as you keep track of what you have done).

Centre lines are preferred as door and window openings can be easily positioned onto them.



INDEX A 13-16 – SCALES

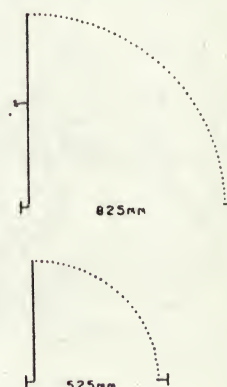
These are pre-drawn metric scales which you can copy direct onto the workpage as a guide while drawing as well as for inclusion on the finished sheet for plotting.



INDEX B 1-4 – DOORS

These are standard door openings. You can position them on the centre line of the walls then redraw the wall line to each end of the door opening.

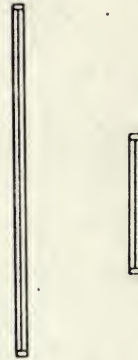
The hinge end of the opening is located at the centre of the COPY cursor. Use ROTATE or FLIP to alter the 'Handedness' of the door. When redrawing the wall lines to the opening the hinge end can be located directly using FIND. To locate the other end ZOOM to a 100mm grid, DRAW a POINT at the opening, return to base-page (or other convenient view), then FIND the drawn point and shift the grid to it before continuing the wall line.



INDEX B 5-12 – WINDOWS

These are standard window openings to be used in the same way as the doors. Note that the windows can be combined to give multiple openings.

Door and window openings are in multiples of 100mm as per BS4011 and other standards. Remember however that you can easily construct your own non-standard openings for use on ground plans. Start with one end at the centre of the screen so it can be easily located. To FIND the other end ZOOM on it to the required accuracy then DRAW a POINT and proceed as for a standard opening.



INDEX B 13-16 – SPARE

These are spare boxes in which you can file your own drawing units.

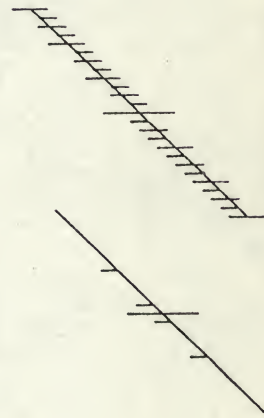
INDEX C 1-8 – WALL GAUGES

These are wall thickness gauges which you can COPY and position at corners or any point along your outline.

ZOOM on the gauges and DRAW POINTS at the required positions. These points can then be located with FIND and connected at page view.

Different gauges are provided for standard wall thicknesses on internal, external and centre guide lines – the centre of the COPY cursor being positioned on the line for all cases.

Gauges are provided for 100mm and 250mm walls as well as general 10mm and 25mm rules. Again you can produce your own gauges to suit your specific applications.



INDEX C 9-12 – ARROWS

These are a North indicator and various arrows (point at cursor centre) for direct use on your drawings. These units are not scaled so can be positioned at any convenient size.



INDEX C 13-16 – SPARE

These are spare boxes in which you can file your own drawing units.



Handwritten text, likely a title or header, located below the rectangular box. The text is very faint and difficult to read, but it appears to be a single line of writing.

Handwritten text, likely a subtitle or a second line of a header, located below the first line of text. It is also very faint and illegible.

Handwritten text, likely a third line of a header or the beginning of a paragraph, located below the second line of text. It is very faint and illegible.

Handwritten text, likely a fourth line of a header or the beginning of a paragraph, located below the third line of text. It is very faint and illegible.

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Handwritten text, likely an eleventh line of a header or the beginning of a paragraph, located below the tenth line of text. It is very faint and illegible.

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Handwritten text, likely a twentieth line of a header or the beginning of a paragraph, located below the nineteenth line of text. It is very faint and illegible.

Handwritten text, likely a twenty-first line of a header or the beginning of a paragraph, located below the twentieth line of text. It is very faint and illegible.

Handwritten text, likely a twenty-second line of a header or the beginning of a paragraph, located below the twenty-first line of text. It is very faint and illegible.

Handwritten text, likely a twenty-third line of a header or the beginning of a paragraph, located below the twenty-second line of text. It is very faint and illegible.

Handwritten text, likely a twenty-fourth line of a header or the beginning of a paragraph, located below the twenty-third line of text. It is very faint and illegible.

Handwritten text, likely a twenty-fifth line of a header or the beginning of a paragraph, located below the twenty-fourth line of text. It is very faint and illegible.

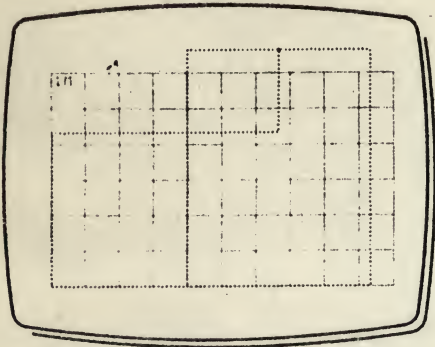
Handwritten text, likely a twenty-sixth line of a header or the beginning of a paragraph, located below the twenty-fifth line of text. It is very faint and illegible.

Handwritten text, likely a twenty-seventh line of a header or the beginning of a paragraph, located below the twenty-sixth line of text. It is very faint and illegible.

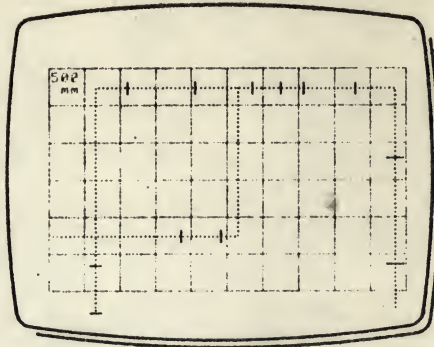
Handwritten text, likely a twenty-eighth line of a header or the beginning of a paragraph, located below the twenty-seventh line of text. It is very faint and illegible.

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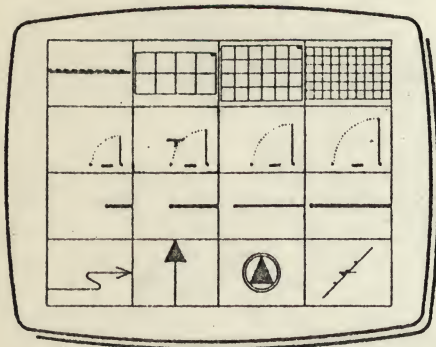
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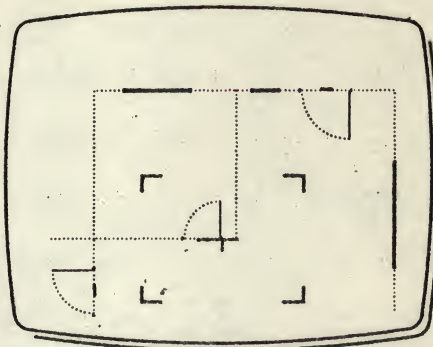
DRAW GUIDELINES ON SCALE PAGE



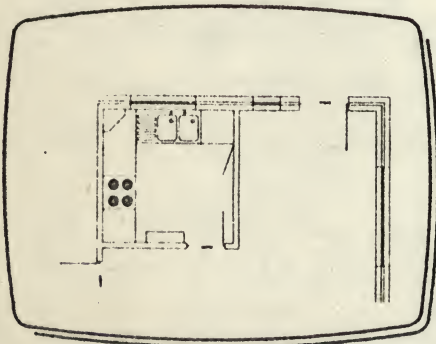
POSITION DOORS AND WINDOWS



COPY FROM THE LIBRARY



ZOOM TO ADD DETAILS



ADD WALLS AND FIXTURES



FINISHED AND READY TO PLOT

